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**The Treadmill of Production and the Treadmill of Law: Propositions for Analyzing
Law, Ecological Disorganization and Crime**

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Abstract

Treadmill of production (ToP) arguments have significant implications for the study of environmental crime. A current limitation of those arguments involves their application to environmental law and its enforcement. We argue that a treadmill of law (ToL) shapes and maintains production through lawmaking and enforcement practices, issues that have yet to receive significant attention in the ToP literature. To illustrate the connection between the ToL and ToP and to facilitate political economic analysis of this connection, we make and discuss three propositions. In particular, we suggest that the ToL will (1) oppose the enhancement of environmental regulation through acts of state corporate crime, if necessary; (2) fail to enforce criminal laws in ways that would alter production practices; and (3) define intense opposition to ToP interests and actors as criminal.

Introduction

Critical scholars have documented the tendency for environmental laws to reflect and reproduce powerful economic interests (Barnett 2000; Faber 2008; Gonzalez 2004; Pearce and Tombs 1998; Szasz 1986). These critical observations about law are consistent with the notion of a treadmill of production (or ToP), or the idea that “economic criteria remain the foundation of [environmental] decision making” (Schnaiberg, Pellow, Weinberg 2002, 16). We extend the ToP perspective to draw attention to the ways the law contributes to shaping and maintaining powerful economic interests through environmental lawmaking and enforcement practices. We refer to this practice as the treadmill of law (or ToL). This issue—how environmental laws can also be used to maintain the ToP—has yet to receive sufficient attention by critical scholars. To frame our arguments we begin with a review of ToP. Next, we lay out our conceptualization of the ToL and present three basic propositions central to establishing a ToL.

Treadmill of Production

Schnaiberg (1980) developed the ToP thesis in *The Environment: From Surplus to Scarcity*. He argues that ecological systems contain an energy production and management system that creates and directs the flow of energy through processes such as photosynthesis and the conversion of expended animal and plant life into carbon stores. At some point humans discovered how to transform energy stored in fossil fuels into usable energy to run their economy. While all economies rely on energy, the use of energy in capitalist production is influenced by capitalism’s primary objective: its quest for profit (Marx [1867] 1976). Under capitalism producers can

increase profit by expanding production, selling more products and/or by reducing labor costs. Significant ecological consequences result from these pursuits (Foster, Clark, and York 2010). For instance, firms can accomplish the above by increasing energy consumption or the use of chemical technology to enhance mass production and bring labor costs down. This is at least one of the ways the history of energy use and class conflict under capitalism appear (Foster, Clark, and York 2010). Adding to our admittedly simplified summary of capitalism, and drawing on Schnaiberg (1980), intensified use of fossil fuel and chemical energy to expand production and reduce labor costs is a key feature of post-WWII capitalism, or of the capitalist treadmill of production.

Schnaiberg (1980, 228–229) argues that the normal operation of capitalism generates significant levels of “conflict” between ecology and the economy. That is, production accelerates under capitalism and therefore demands greater resource extraction (i.e., withdrawals) and pollution (i.e., additions). Importantly, expansion of production results in ecological disorganization, a condition that exists when humans access energy organized in the environment in ways that prevent the sustainability of ecosystems and the biosphere. The contradiction between capitalism and nature has been extensively analyzed by critical scholars (e.g. Boyce 2002; Burkett 1999; Clark and Foster 2009; Foster 2000; 2005; Foster and Clark 2009; Gould, Pellow, and Schnaiberg 2008; Jorgenson and Clark 2012; O’Connor 1998, 1994; Schnaiberg and Gould 1994; York 2004). As Magdoff and Foster (2011, 43) point out, “capitalism recognizes no limits to its own self-expansion—there is no amount of profit, no amount of wealth, and no amount of consumption that is either enough or too much.” Given the conflict between capitalism and nature, the cost of expanding capitalist production is a

constantly increased pace of ecological withdrawals and additions. We will argue that this conflict between capitalism and nature also drives what we call the treadmill of law (ToL). The ToL helps to enable the expansion of the ToP and therefore exists structurally as part of the organization of capitalism. As we will demonstrate, however, conflicting subjectivities can influence the ToL through agency.

Treadmill of Law

Schnaiberg's (1980) theory sets the stage for arguing that a ToL exists and aids the state in supporting the ToP through the state's own criminal activities and its construction and enforcement of environmental regulations. For instance, Schnaiberg (130) suggests the state creates policies that direct economic investment and tax incentives toward science and technological innovations that enhance manufacturing and agricultural production without considering the ecological costs of those policies. He also notes that despite the tendency of environmental law to expand, substantial variation in these regulations exists across nations and time that aids the expansion of the ToP. These observations provide the context in which to examine how the ToP influences ToL definitions of crime, the enforcement of environmental laws, and how the ToL thus feeds back into the ToP.

The concept of the ToL is an extension of ToP theory. The phrase "treadmill of law" is employed here specifically to refer to the ways in which environmental laws and regulations reflect and reinforce economic relations that legitimize and replicate ToP practices, relationships, and interests, and contribute to expansion of the ToP. This understanding of the ToL is an extension of the general materialist explanation of law (see e.g. Pashukanis [1924] 2007). We follow ToP scholars closely in their suggestion

that there are three major sets of actors in the ToL. First, there are producers responsible for ecological disorganization through ecological withdrawals and additions. Producers often employ lobbyists and fund interest groups to represent their material interests when it comes to the formation of environmental law and regulation. Second, there are various state officials and representatives who influence, create and enforce environmental laws and regulations. Finally, there are citizens and citizens groups who often call for environmental protection. These three major sets of actors are often in conflict over the form and shape of environmental laws and their enforcement.

Drawing from ToP theory, we also suggest that the ToL can be described using three general propositions that make up the focus of this analysis. These propositions tend to be stringent, meaning that they tend to insulate the law from dramatic change and that the structure of the ToL will create a long-term affinity to protect ToP interests over public and ecological health interests. These propositions are based on general observations about the ToP and its actors (treadmill organizations, labor, state, environmental groups and organizations) developed by Schnaiberg (1980; see also Gould, Pellow, and Schnaiberg 2008; Schnaiberg and Gould 1994). Building upon observations that the ToL reinforces the ToP, we argue that producers oppose environmental regulations, including criminal regulations, which place constraints on production and accumulation. Because the ToP favors an unregulated free market and capital accumulation over other outcomes (e.g. environmental protection), treadmill actors attempt to employ the ToL to oppose both more stringent environmental regulations and efforts to define ecological disorganization as a crime (see e.g. Lynch et al. 2013) to protect their economic interests.

Proposition 1: The ToL will oppose (through state-corporate crime, if necessary) enhancements of environmental regulations that criminalize ecologically destructive behaviors of the ToP and its agents

As noted above, under capitalism production generally expands (Schnaiberg 1980). The law plays a crucial role in this expansion. Defining ecological withdrawals and additions as non-harmful and/or non-criminal is central to the ToL. As Schnaiberg, Pellow and Weinberg (2002, 24) have already suggested, “treadmill organizations generally resist environmental regulation with all the substantial means at their disposal.” As a result, producers spend “many of their environmental dollars on fighting regulation” (Porter and van der Linde 1995, 128). More recently, some companies are even openly refusing to obey agreements with environmental regulators. For instance, Devon Energy (a company in Oklahoma, USA) has stated it will no longer (1) honor a previous commitment to the United States Environmental Protection Agency (US EPA) to reduce environmental pollution through the implementation of industry standard technology and (2) invest in a supplemental environmental projects to mitigate environmental damage (Tabuchi and Lipton 2017). Devon’s reasoning is that production is declining, and obeying regulation is harmful to their bottom line.

The law also helps justify and reinforce production by devaluing harm caused by chemical-based production while reinforcing orthodox definitions of crime. For instance, lawyers for Dow Chemical (which donated significant funds to President Trump’s political campaign) sent a letter to the Trump administration asking them to downplay recent government studies demonstrating the risks of major pesticides used in industrial agriculture production (Mukherjee 2017).

State actors also support production by resisting expansion of criminal

environmental laws through state-corporate relationships that manipulate the law to avoid the application of criminal labels. This can also include engaging in behaviors criminologists define as state-corporate crime or as “[i]llegal or socially injurious actions that occur when one or more institutions of political governance pursue a goal in direct cooperation with one or more institutions of economic production and distribution” (Kramer and Michalowski 1990, 4). This definition can be used to show how producers engage in behaviors that can be defined as criminal. For instance, Kramer, Michalowski and Kauzlarich (2002) argue that sometimes state-corporate crimes occur when governments fail to prevent deviant business practices from promoting economic growth. This argument has been applied to analyses of how state-corporate interests affected US climate change regulations (Kramer 2013; Lynch, Burns, and Stretesky 2010). Because capitalism is based on accumulation that is often situated in production, constant economic growth and expanded natural resource extraction, state-corporate crimes that facilitate ToP expansion will often emerge. Thus, for instance, President Trump’s recent actions to withdraw the US from the Paris climate accord on account of its being damaging to domestic production could be defined as an act of state-corporate crime (Liptak and Acosta 2017).

State-corporate crime perspectives also suggest that political economic organization facilitates corporate access to political resources that in turn shape the construction and enforcement of environmental law and engagement in ecological harm. For instance, Lynch, Burns and Stretesky (2010) examined the politics of global warming during the George W. Bush administration. During Bush’s presidency, high-ranking White House officials held secret meetings with representatives of the fossil fuel, energy, and chemical sectors to shape US environmental policies. When these

secret meetings were revealed Congress investigated and demanded that the White House adhere to public law concerning the conduct of policy meetings (Lynch, Burns, and Stretesky 2010). Vice President Dick Cheney was ordered to make his private meeting notes public, a legally enforceable request he refused during his entire stay in office (Lynch, Burns, and Stretesky 2010). These secret energy meetings demonstrate how producers, as ToL actors in the energy sector, engage lawmakers to normalize ecological harms created during production and keep their actions from being defined as criminal (Chambliss 1989; Fagin and Lavelle 1996).

With respect to the social construction of state-corporate environmental crime, there are at least four additional mechanisms that characterize ToL's opposition to the criminalization of producer-polluters. These include: (1) challenging scientific evidence, by asserting that the harms claims offered by scientific studies are flawed and cannot be used to draw conclusions that would inform the lawmaking process (Markowitz and Rosner 2003); (2) economic protectionist arguments legitimized by law which claim, for example, that proposed environmental regulations will promote social problems such as reduced economic growth, spurring unemployment and inflation (Jorgenson and Wilcoxon 1990); (3) arguments that in a free market regulation is unnecessary because the market provides corrective mechanisms that ensure environmental protection (Fagin and Lavelle 1996); and (4) the idea that no "crime" has actually occurred because the harmful acts do not meet the burden of proof required to set the law in motion. In these ways a ToL that helps protect the ToP is generated.

In short, actors and representatives of the polluter industrial complex influence the definition of environmental/green crime by engaging with lawmakers and enforcement personnel. Importantly, however, definitions of crime and harm are

contested and do change over time, that is, the ToL is constantly shaped and reshaped by conflicts between producers, lawmakers and citizens. For example, Faber (2008, 5–7) details how the public’s demand for a clean environment led to a dramatic increase in the adoption of federal environmental laws and regulation during the 1970s.

Importantly, Faber suggests that some of these protections mandated that producers implement technology to make production less harmful. Nevertheless, many socially disadvantaged segments of society (i.e., working class, poor and minority communities) did not benefit from this new wave of environmental protection (Faber 2008, 10), since the implementation or enforcement of environmental law reflected power arrangements that allowed production to continue while protecting the more privileged members of US society in the process. More recently there has been a backlash against environmental regulation that developed in the 1970s and producers have been seeking to repeal or replace these “outdated” laws with neoliberal environmental policies. These new laws and regulations are to ensure the expansion of production in the modern era under free market ideology. For example, when George W. Bush was the Governor of Texas, he signed a law drafted largely by industry that allowed for voluntary participation in pollution reduction (Yardley 1999). The law was a direct result of concern by Texas industry (for example Exxon and Marathon Oil) that pending environmental legislation would mandate that companies adopt cleaner production practices in outdated industrial plants. Thus, rather than rely on government regulation that may define them as “criminal” or “deviant,” producers often advocate for self-policing arguing, instead, that they are good environmental stewards.

Proposition 2: The state's enforcement of criminal environmental laws will not change production trends or limit ToP expansion

In the orthodox view it is generally assumed that the purpose of law, whether criminal or regulatory, is to control adverse outcomes and change the behavior of individuals and entities engaged in harmful activities. To accomplish that outcome, orthodox theory often argues in favor of the use of law and its enforcement to deter criminal behavior. Even the US EPA assumes that more stringent environmental law and law enforcement deter environmental criminal behavior.

Here the question is whether the ToL changes the trajectory of the ToP by creating and enforcing environmental laws (Stretesky, Long, and Lynch 2013a). On this point Gould, Pellow and Schnaiberg (2008, 68) suggest that “[p]olicy interventions can ... generate incentives for some alteration of technological trajectories, and may preclude some forms of production,” meaning sometimes the law confines production. This occurs to the extent that the state is a meaningful location of class struggle over ecological disorganization played out in the creation and enforcement of laws (Schnaiberg 1980). In theory strict environmental laws can decelerate the ToP when the state and environmental enforcement agencies effectively represent the public’s interest in maintaining environmental health (Gould, Pellow, and Schnaiberg 2004).

In contrast, we suggest that the ToL will only challenge production through the application of criminal sanctions when infamous ecological events perceived to have serious ecological consequences are punished. When well-known environmental disasters become the focus of public scrutiny, criminal law is likely to become relevant and there may be public pressure to apply it to treadmill actors who contributed to the disaster. For example, the United States Department of Justice charged two British

Petroleum employees with manslaughter for their perceived role in the Deepwater oil spill in the Gulf of Mexico (Grimm 2015; Milman 2015). Those charges appealed to the public's dislike for BP. As Bell (2012) laments, "A catastrophe of this magnitude *should* change a company forever" (emphasis added). The question, however, is: "Does punishment and social condemnation really change the behavior of the offender and other producers in a way that reduces ecological disorganization?" On this point we suggest that criminal law does little, if anything, to change production, a point supported by the limited empirical evidence addressing this question (Stretesky, Long, and Lynch 2013a). We therefore suggest that the ToL will not change the ToP's normal operation and development.

This role of the ToL in maintaining production and its inability to alter the ToP even in times of severe ecological destruction are facilitated by conflicting roles of the state. That is, the state, given its structural connection to the ToP and the public, must balance its efforts to produce and reinforce the ToL to protect the public's interest in environmental protection and public health with its interest in generating conditions for economic expansion to support the ToP (Gould, Pellow and Schnaiberg 2008). As an example of these later interests, under existing environmental policy-making and some environmental laws lawmakers are required to address economic considerations when modifying the ToL to protect treadmill organization and economic growth interests. Illustrating that point, the phrase "economic assessment" occurs 1,210 times on the US EPA website. In the United Kingdom the Environment Agency (2010, 16) states, "As part of contributing to economic prosperity, we work with policy makers and planning authorities to encourage economic regeneration and development that can be sustained within environmental limits." Thus, state agents may represent both

sides in an environmental struggle, which can also lead to conflicts between state agencies on specific environmental policies or regulations (Merry 2006), shaping the outcome of a ToL conflict. On this point it should be noted that individual lawmakers may also oppose enforcement against treadmill organizations to whom they are connected. Lawmakers are not a unified, homogeneous group, and structural interests in maintaining production may shape whether they endeavor to influence the ToL.

Importantly, empirical evidence specifically suggests that criminal enforcement does little to change the pollution practices of treadmill actors. Stretesky, Long and Lynch (2013a; see also Long et al. 2012 and Stretesky et al. 2017) examined the influence of enforcement efforts against producers to determine whether punishments reduced future pollution emissions. They found that the correlation between penalties and toxic releases is weak at best, suggesting that penalties do little to alter ToP practices. This means that the ToL is currently ineffective at slowing the ToP in any meaningful way, an explanation of which can be situated in political ecology literature connecting capitalism and accumulation (Foster 2000). In that context, the ToL reinforces the profit/production/expansion objectives of capitalism over the preservation of nature. In the modern world, where capitalism and the capitalist ToP have become ubiquitous and developed into a worldwide system of production, these political economic forces may also influence the development and application of international environmental law.

In sum, in a capitalist free market system characterized by unequal ownership and accumulation along with constantly expanding production the following holds true: (1) the structure of the ToL will tend to reinforce the political economic organization of capitalism; (2) many ToP behaviors that promote ecological

disorganization will be excluded from or only partially addressed in the ToL; (3) enforcement of ToL environmental laws will be shaped by political economic relationships and class conflict; while (4) enforcement of ToL environmental laws will fail to constrain expansion of the ToP or ecologically destructive ToP behaviors.

Proposition 3: Actors who threaten the ToP are likely to be defined as “green”

deviants and criminals

Opposition to ToP practices has emerged across the globe as environmental organizations monitor environmental crimes, help enforce environmental laws and call upon the state to enforce those laws. Some argue these activities possess the potential to shift power away from treadmill organizations to environmental organizations (Bondaroff 2011; Kinchy and Perry 2012; Overdevest and Mayer 2008). Gould, Schnaiberg and Weinberg (1996, 10 and Chapter 5) suggested that political resistance, though faced with numerous political challenges, can “alter the environmental impacts of the newer globally tilted treadmill” and provide a “pervasive challenge to the nation-state.” Opposition to the ToP comes in various forms represented by, for example, independent scientists, government scientists, scientists and activists employed by NGO environmental organizations, locally affected populations that sometimes form grassroots organizations, and national or regional social movement organizations that have already formed to engage in environmental struggles (Bullard 2000; Cole and Foster 2001). Treadmill actors, however, oppose political resistance from the environmental movement. This opposition comes in the form of counter-movements (Rowell 1996), and this has implications for the ToL and its relationship to defining and enforcing environmental regulation. As noted, the law will tend to

reinforce production and define behavior that could potentially disrupt production as criminal. There are many instances where treadmill actors and the state use the law to constrain pro-environmental behavior by individuals and organizations. The strategic lawsuit against public participation (SLAPP) is one such tool in the ToL. A SLAPP is unlikely to be successful in court. Instead, the purpose of a SLAPP is to threaten and intimidate activists so that they do not challenge ecologically destructive behavior (Norman 2010). Hurley and Shogren (1996) explain that the average SLAPP is approximately 7.4 million dollars, takes an average of three years to resolve, and are filed by a variety of developers and industries against individual activists and environmental organizations. For example, Hurley and Shogren (1996) describe how a major U.S. coal company successfully used a SLAPP against a blueberry farmer who filed a water pollution complaint with the US EPA against the company. The farmer did not have the resources to pursue the complaint as a result of this particular corporate legal tactic. In Canada mining companies have started legal proceedings against environmental organizations for publishing claims that a gold and copper mine could destroy a nearby lake. Referring to the SLAPP, a representative from the nonprofit organization stated that “its main goal is to not only put a chill on our organization, but to send a message to all citizens that if you comment on this project, you could very well likely receive papers in the mail and have to spend considerable time and resources defending yourself.” Governments have also criminalized and restricted certain pro-environmental movements, policy and research. In 2015 in Florida Governor Rick Scott banned state agencies from using the term “climate change,” “global warming” and “sustainability” (McCarthy 2015). In 2010 Virginia’s Attorney General, Ken Cuccinelli, twice attempted to initiate a civil investigation of renowned

climatologist Michael E. Mann for fraud when applying for funds to conduct climate change research (Rudolf 2011).

More central to the ToL, however, is the use of criminal labels to draw attention to individuals and groups who oppose ToP-effected ecological destruction. For instance, the ToL has created a special category of offenses (i.e., “eco-crimes”) and offenders (i.e., “eco-terrorists”) for actors who resist ecologically destructive practices, and the Federal Bureau of Investigation has used its anti-terrorism unit to label and investigate “eco-terrorists,” including People for the Ethical Treatment of Animals. These labels started to emerge shortly after the rise of the modern environmental movement (Smith 2008). In a 2002 testimony before the United States House Resources Subcommittee on Forests and Forest Health, James Jarboe, the Domestic Terrorism Section Chief, Counterterrorism Division of the Federal Bureau of Investigation suggested that

Since 1977, when disaffected members of the ecological preservation group Greenpeace formed the Sea Shepherd Conservation Society and attacked commercial fishing operations by cutting drift nets, acts of “eco-terrorism” have occurred around the globe. The FBI defines eco-terrorism as the use or threatened use of violence of a criminal nature against innocent victims or property by an environmentally-oriented, subnational group for environmental-political reasons, or aimed at an audience beyond the target, often of a symbolic nature.

Thus, over time, individuals and organizations that attempt to stop harmful environmental behavior in unconventional ways have been described as eco-terrorists.

What is clear is that the law has been used to legitimize the use of this term and has expanded eco-terrorism laws and punishments in an effort to constrain resistance against ecological disorganization (Nilson and Burke 2002). However, pro eco-terrorism definitions have not gone unchallenged. As Smith (2008, 537) noted, the label eco-terrorist is inappropriate because it “stifles political dissent and is being used as a pretext to ensure the protection of private economic gains.” Nevertheless, actors opposing the ToP have become increasingly subject to expansion of the ToL in ways that protect the accumulation of capital. Applying criminal and terrorist labels to pro-environmental actors allows the state to control them through violence, if necessary. As a result, Global Witness (2014) suggests that state- and corporate-sponsored murders of environmental activists are increasing. In support of these anti-eco-terrorism ToL initiatives the media reports thousands of eco-terrorist acts annually (Hirsch-Hoefler and Mudde 2014), while some scholars note an increase in pro-environmental military activism by environmental movements and environmental NGOs (Azmi 2013, 1). These statements serve to remind us that the ToL directs attention away from the ToP and back to more orthodox crimes.

Conclusion

Foster (2000) has argued that the normal operation of capitalism is in direct conflict with ecosystem and human health. We suggest that the ToP generates substantial ecological disorganization that can be defined as “green crimes” (Lynch et al. 2013). The ecologically destructive effects of the ToP have drawn significant attention following Schnaiberg’s (1980) introduction of that concept, leading many to focus on the connection between the continuous expansionary drives of capitalism and the

expansion of ecological destruction. To date, however, ToP research on the interrelationship between the ToP and law has been limited. Here we have examined the connection between production and the law in what we refer to as the ToL.

The ToL is shaped by the conflict between capitalism and ecology, and by ToL-related socio-political conflicts between scientists, policy-makers and ToP actors, as illustrated, for example, in the contested illness literature (Brown, Morello-Frosch, and Zavestoski 2012) and even in conflicts between various environmental activists (Taylor 2000). Those contests/conflicts are shaped above all else by the structural imperatives of economic expansion under capitalism, because, as Gould, Schnaiberg and Weinberg (2002, 5) remind us, “public institutions [are] developed by the state to facilitate economic growth.”

Here we have formulated three basic propositions concerning the relationship between the ToL and ToP which can be expanded upon and investigated further to examine how environmental laws and regulations become their own treadmill that reinforces the ToP to ensure that the process of accumulation is not disrupted. This framework suggests that the emergence of a ToL largely maintains the status quo of production and facilitates the expansion of production and ecological disorganization. The ToL accomplishes this by reinforcing minimal environmental regulations that allow polluters to avoid being criminalized, limiting the enforcement of environmental regulations and imposing but a few weak punishments on corporate environmental violators, as well as by creating a special criminal category for those who oppose ecologically destructive behaviors of production.

Certainly, there numerous conflicts arising in socio-political conflicts monitored by the environmental ToL that shape its path for which we have yet to account. For

instance, treadmill actors may have competing interests with other treadmill actors, adding a dimension of economic struggle to ToL conflicts that requires additional analysis (Clapp 2010; Markussen and Svendsen 2005). Moreover, the number of competing interests is affected by the nature of the ToL conflict (e.g. whether it is local, national, or regional). In short, the exact context of any given ToL environmental conflict will affect how treadmill actors behave in particular situations, what the tools they employ, what alliances they form (Jessop 1993), and how the ToL conflict ends. In general, however, ToL conflicts will be shaped by structural factors related to the organization of capitalism.

Our argument suggests that the ToL restricts environmental policy in ways that favor ToP interests over public and environmental health interests, although not always. As a result, a ToL approach can be used to explain the lack of officially state-labeled environmental crime and deviance among treadmill organizations, and to shed light on why the state supports the ToP by resisting efforts to define “green” crime as “acts that cause significant harm to ecological systems for the purposes of accumulation” (Stretesky, Long, and Lynch 2013b). As noted, this approach requires social scientists to reorient their thinking about the definition of crime away from state definitions and toward harms-based and even scientific definitions of ecological harm. Such explanations reveal biases in environmental lawmaking and the application of environmental laws and regulations, and draws attention instead to the ways in which capitalism causes significant ecological harm and is aided by the organization and application of the ToL. Importantly, our argument draws attention to the ways the law contributes to shaping and maintaining the production through environmental

lawmaking and enforcement practices, issues that have yet to receive significant attention in the ToP literature.

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